

# OPERATING INSTRUCTIONS FOR MODEL TV-11 TUBE TESTER

1. Insert the line-cord into a 105-125 volt 60 cycle A.C. line. This instrument will not operate on D.C. power lines.
2. Place the "power" switch in the "on" position.
3. Place the 4 position slide switch, located to the left of the levers, in the "line" position.
4. By means of the "line-adjust" control, adjust the meter to read center scale.

## TO TEST A TUBE FOR QUALITY

1. Set the "filament-voltage" switch to the correct tube voltage as designated in the chart. If no voltage is given, the "filament-voltage" switch may be left in any convenient position.
2. Place the lever number designated in the "F" column in the "F" or filament position.
3. Place any levers designated in the "N" column in the "N" or neutral position. Leave these levers in their position during the complete test for the tube. Do not move these levers for either the "quality" or "short" tests.
4. Place the lever designated in the "P" column in the "P" or plate position. If more than one "P" position is indicated, see instruction #6 below.
5. Place the "load control" to the setting designated in the "load" column of the tube under test. If more than one "load" position is indicated, see instruction #6 below.
6. Tubes having more than one listing are multi-section tubes and each section is individually tested. See that all sections are tested and none are omitted. The "P" and "load" settings vary for the various sections. The "F" and "N" positions do not vary and should not be moved when making "quality" or "short" tests.
7. For regular tests, set the 4 position slide switch located to the left of the levers, in the "reg" position. For special tests, as indicated by the letter "S" after the "P" setting, set the 4 position switch to the "special" position.
8. Place all other switches in the "K" or cathode position.
9. Insert the tube into its socket. Be extremely careful when inserting sub-miniatures. These tubes have a red dot on one side and should be placed in the socket so that the dot on the tube corresponds to the dot on the tube socket.
10. Read the quality of the tube directly on the meter scale.

\*NOTE: SOME TUBES, ESPECIALLY HIGH VOLTAGE DIODES, HAVING A LOAD SETTING OF 10, HAVE EXTREMELY HIGH RESISTANCE. A READING ABOVE 10 FOR THESE TUBES INDICATES A GOOD TUBE. A HIGHER READING IS OF COURSE PREFERABLE.

## EXAMPLE OF TUBE TEST

### Tube 117P7

#### Test #1 Pentode Section

1. Set filament voltage to 117 volts.
2. Set #2 lever in "F" position.
3. Set #4 lever in "P" position.
4. Set load control to 3.
5. Set slide switch to "regular".

#### Test #2 Diode Section

1. Leave filament selector at 117 volts.
2. Leave #2 lever in "F" position.
3. Set #8 lever in "P" position.
4. Set load control to 3.
5. Set slide switch to "special" as indicated by the "S" after the 8 in the "P" position.

## TO TEST FOR SHORTS AND LEAKAGES

1. Place the 4 position slide switch, located to the left of the levers, in the "short" position.
2. Place the "leakage" slide switch, located to the right of the line voltage control, in the "tube" position.
3. Place the "load" control in its completely clockwise (#10) position.
4. With the exception of the lever switches which are already in the "F" and "N" positions, as instructed on tube chart, place all other levers down to the "K" position. Now place each remaining lever one at a time in the "P" position observing neon. Be sure to return each lever to the "K" position before bringing the next one to the "P" position.
5. Note the neon lamp. A steady glow indicates a short. A single flash may be disregarded as it is caused by the tube capacity. A slight glow may be disregarded when testing audio tubes such as 6L6, 43, 50L6 etc. These tubes have a high inherent leakage which in many cases does not affect the operation of the tube. No glow is of course preferable but a slight glow is passable.

A steady glow on any of the elements listed in the filament continuity column does not indicate a "shorted" tube but does indicate filament continuity.

## TO TEST FOR FILAMENT CONTINUITY

To test for filament continuity proceed as in "To Test for Shorts" but use either of the levers indicated in the filament continuity column. One must be in the "P" position when the other is in the "K" position. Either may be used. The neon will glow if the filament is intact. No glow means an open filament.

## TO TEST FOR NOISE

To test for noise, plug a pair of magnetic phones into the phone jack while the tube is being tested for quality. Tap the tube and place each element lever in the "P" position while listening with the phones. Noise will be heard as a "pinging" sound super-imposed over the hum.

## TO TEST A CONDENSER FOR LEAKAGE

1. Insert the line-cord into a 105-125 Volt 60 cycle A.C. line. This instrument will not operate on D.C. power lines.
2. Place the "power" switch in the "on" position.
3. Place the 4 position slide switch, located to the left of the levers, in the "line" position.
4. Place the "leakage" slide switch, located to the right of the line voltage control, in the "condenser" position.
5. By means of a set of test-leads, connect the condenser under test to the jacks marked "Cond."
6. A good condenser will flash only one time. More than one flash (charging of condenser) is caused by leakage of the condenser, the flash indicating the rate of leakage. A condenser which flashes more than once per second may be regarded as having excessive leakage. Do not attempt to test Electrolytic Condensers by this method. It is designed for all other types including paper, Mica and Ceramics.

## TO TEST PILOT LAMPS

1. Set filament voltage selector to pilot lamp voltage.
2. Place the #1 lever in the "F" position—all others in the "K" position.
3. Insert into center of large 7 pin socket.

## NOTES

Note A—Reading above 10 is O.K.

Note B—Reading above 20 is O.K.

Note C—Pin #1 is missing.

\*IMPORTANT: We find many users have overlooked the reference to High Voltage diodes (See Note upper section). The 1B3, 1X2, 1X2A, 1V3, 2V3, 2X2, 879 etc. are such tubes. Because of their extremely high resistance, a reading of 10 or above for these particular types is okay.